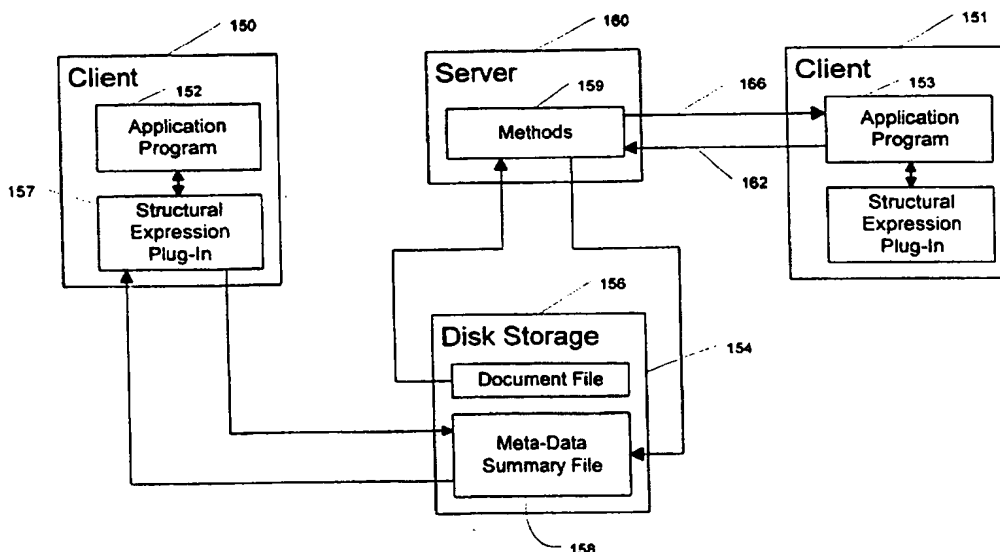




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>G06F 13/00, 17/21, 3/00, G06T 11/00</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 99/32982</b> <b>(43) International Publication Date:</b> 1 July 1999 (01.07.99)
<b>(21) International Application Number:</b> PCT/US98/27322 <b>(22) International Filing Date:</b> 21 December 1998 (21.12.98) <b>(30) Priority Data:</b> 08/997,209 23 December 1997 (23.12.97) US <b>(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application</b> US 08/997,209 (CIP) Filed on 23 December 1997 (23.12.97) <b>(71) Applicant (for all designated States except US):</b> ADOBE SYSTEMS INCORPORATED [US/US]; 345 Park Avenue, San Jose, CA 95110-2704 (US). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> RAMAN, T., V. [IN/US]; 900 High School Way #2326, Mountain View, CA 94041 (US). CARO, Perry, A. [US/US]; 1269 Glen Haven Drive, San Jose, CA 95129 (US). <b>(74) Agent:</b> GARCIA, Edouard, A.; Fish & Richardson P.C., Suite 100, 2200 Sand Hill Road, Menlo Park, CA 94025 (US).		<b>(81) Designated States:</b> CA, CN, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>

(54) Title: DESCRIBING DOCUMENTS AND EXPRESSING DOCUMENT STRUCTURE



## (57) Abstract

Apparatus and methods of revealing the hierarchical structure of a document having content of a characteristic type of content are described (100). The hierarchical structure may be expressed, independently of document content type, as a tree structure of one or more nodes (126). A semantic representation for interpreting the tree structure may also be provided, document description files are used to encapsulate structural and meta information associated with a document stored on a computer-readable medium (156). Document description files are external to native application files and have a set of required fields. Document description files point to the referenced document data using uniform resource locators (URLS) and serve as virtual documents. In addition to the required fields, applications can choose to encode additional structural information in the document description files.